

LandUse

Planning

Consultation

Design

PARKING AND TRAFFIC IN FLORENCE

March 1985

Acknowledgements

LandUse, Inc. thanks the people of Florence for their hospitality and patience while we walked their streets and studied their parking habits.

Special thanks to the following individuals and organizations for their help:

- . Mr. George Patenode, President, Florence Savings Bank
- . Mr. Edward Cooper, Cooper's Corner
- . Mr. Gene Bunnell, Director, Office of Planning and Development, City of Northampton
- . Mr. William Arnold
- . All members of the Florence Task Force
- . The Northampton Housing Authority

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INTRODUCTION

While many communities are searching for more parking space, the findings of this study suggest that Florence is in the enviable position of having an adequate supply of both public on-street and private off-street parking. This finding may seem contradictory to some peoples' experiences, as there are certainly times when one can drive through Florence Center and have difficulties locating on-street parking adjacent to a specific building. This study sought a clearer picture of the overall parking and traffic situation in Florence. The results show that the town has a healthy parking situation characterized by the following features:

- . There is heavy use of on-street parking directly in front of popular destinations like the Florence Savings Bank, Bird's and the Post Office.
- . There is light use of on-street parking less than one block from the major destinations.
- . There are high turnover rates along all streets except Depot Street. An average of 68% of all cars parking in downtown Florence stay less than 15 minutes.
- . Florence's business mix encourages short-term, high-volume parking.
- . Based on two methods of estimating whether a town has enough parking, Florence has a 30% surplus of parking beyond what it currently needs.
- . When downtown parkers were asked whether they thought parking in Florence was okay or needed improvement, the majority (61%) said it was okay. Only 20% felt that more spaces should be created.
- . Most parking spaces are within private lots (78%). Increased use of these lots could lessen on-street parking pressure.

- . Certain measures to alter and/or clarify circulation along Depot and Keyes Streets can improve overall traffic flow.
- . The business activity and the occasional periods of congested parking are signs of a healthy downtown.

The objectives of the parking study and the tasks undertaken are presented in the first section of this report. The next section summarizes the findings of the parking study. The third section summarizes an examination of the traffic in key areas. Accompanying tables present the complete data generated. The concluding section ties together the research findings; recommendations are made concerning both parking and traffic flow.

I. METHOD OF PARKING STUDY

The method used in this study can be broken down into three basic pieces:

- 1) definition of the objectives and the study area
 - 2) data collection
 - 3) data analysis
- 1) Objectives - The purpose of this work was to gain an understanding of Florence's current parking situation and identify potential problems. The specific tasks undertaken were:
- . Identify the location and number of both on and off street parking spaces

- . Identify current land uses.
- . Monitor parking patterns to determine if Florence's supply of parking is sufficient to meet demand.
- . Compare those findings with a supply-demand projection based on the number of square feet of downtown land use and parking demand standards related to each type of land use.
- . Measure turnover rates.
- . Survey user attitudes towards the parking situation in Florence.
- . Map inventory data.
- . Map projected development projects.
- . Identify strengths and weaknesses of Florence's parking situation.

The study area was defined by the Berkshire Design Group in consultation with the Downtown Florence Task Force. That area encompassed all the day-to-day parking areas used by downtown patrons. This report focuses on parking inside the designated study area. It should be noted that additional parking occurs in adjacent areas.

Since parking takes place in relation to where people want to go, the study area was divided into four quadrants. Each quadrant includes the primary parking spaces used by people visiting the businesses and services located within that quadrant. In this way the adequacy or inadequacy of parking can be evaluated in relation to the requirements of

the specific cluster of businesses that the parking serves.

Figure 1 and Map 1 define the four quadrants.

2) Data Collection - This study consisted of four data collection steps:

- a) Inventory of parking spaces on the street and in different lots
- b) Inventory of building use by square footage
- c) Field monitoring of parking patterns
- d) Survey of user attitudes towards parking in Florence

A) Parking Space Inventory: This task consisted of identifying and counting numbers of on-street and off-street spaces within the study area. Spaces per area were determined by either counting existing painted spaces or measuring an area and dividing it by the City's standard parking space size of 10' x 18'.

B) Building Use Inventory: Assessor maps and field cards were used to collect the following data on building use--lot size, ground floor building area, number of stories, lot number, current use, public vs. private ownership and zoning. Actual uses were verified on site.

C) Field Monitoring of Parking Patterns: Parking patterns in Florence were observed on three separate occasions--Tuesday, February 12 (9 am - 4 pm), Thursday, February 21 (4-9 pm), and Saturday, February 16 (9 am - 12 noon). The study area was divided in half, and each half was monitored at 15-minute intervals. License plate numbers were recorded for all cars

- . Parking patterns were observed on only three occasions. Patterns may change by day and season.
- . The demand standards used in this study are those used in the City of Northampton's zoning ordinance.¹ Since each situation is different, these standard projections should be used only as a basis for comparison with observed demand levels. For this reason the present study monitored the actual number of occupied and vacant spaces and the actual turnover rates during the designated periods.

II. FINDINGS OF THE PARKING STUDY

The Study Area

- . Map 1 shows the study area. The streets within the study area are as follows:
 - Maple Street (from Main down to West Center)
 - North Main Street (up to the Triangle)
 - North Maple Street (from Main to Depot)
 - Depot Street
 - Keyes Street (from Main to Depot)
 - Main Street (from N. Main to Chestnut)

Kinds of Businesses

- . There are 76 businesses operating within the study area.

- 2 gas stations/garages	- 6 eating establishments
- 2 food markets	- 1 bakery
- 1 liquor store	- 5 hair salons

¹Office of Planning & Development. 1977. Zoning Ordinance - City of Northampton, MA. Amended through March 21, 1984.

- | | |
|---------------------------|-----------------------------|
| - 2 drug stores | - 1 convenience/gas station |
| - 2 clothing stores | - 2 carpet stores |
| - 1 hobby store | - 6 health services |
| - 1 dry cleaner | - 1 inn |
| - 1 hardware store | - 7 misc. retail |
| - 1 stationery store | - 10 services |
| - 2 banks | - 1 post office |
| - 3 appliance stores | - 3 auto repair shops |
| - 1 paint store | - 1 sheet metal shop |
| - 1 plastics manufacturer | - 1 computer store |
| | - 1 warehouse/truck stop |

(See Map 1 for land use and square footage details)

- There are a total of 744 spaces in the study area, of which 166 (22%) are on-street and 578 (78%) are off street.

(See Map 2).

- The study area was divided into four quadrants to more easily present the findings. Map 1 shows the location and elements of each quadrant.
- The divisions were made according to the general shopping areas and parking patterns that already exist in Florence. In other words, each quadrant represents the area that a parker would most likely use if he or she were to visit one of the businesses within that quadrant.
- Quadrant II (the Miss Florence Diner and Keyes Street area) has the greatest number of total parking spaces due to the large lots at Alexander's and the Northampton Health Center (See Table 1).
- Quadrant IV (Maple Street area) has the highest percentage of its available space in street parking (39%). This is due both to a large supply of on-street spaces and a small number of off-street spaces.

- . Table 1 also shows the breakdown by street of on-street parking spaces: Main has the most spaces with 52 and North Main has the least with seven.
- . Florence has no publicly owned off-street parking. Map 2 indicates the location and capacity of the privately owned lots.

Parking Trends

- . This study tracked the parking patterns of 1,535 cars that were parked on the street during 13 hours of monitoring. Table 2 presents the on-street capacity levels over time. This indicates how many of the available spaces are taken throughout the day.
- . During this study, Florence's patrons and workers never used more than 56% of the total capacity at one time. This includes all street spaces throughout the study area.
- . Within individual quadrants, the degree of capacity used rose to as much as 72%.
- . Clearly, if one were to look just at the spaces directly in front of popular destinations, then the capacity levels would be 100% during certain times of the day. The quadrants include both on and off-street parking within a block's walking distance from the businesses in that quadrant.
- . The peak parking hours vary between quadrants. Breakfast restaurants attract more people in the morning; the banks

do more business during mid-morning.

- . Table 3 gives the data on the length of time people park on the street in Florence.
- . Overall, around 70% of the people who park on the street stay less than 15 minutes. This is an important aspect to Florence's parking situation. Such a high turnover rate refutes the need for meters, and it indicates that workers find off-street locations to park, leaving the street spaces very accessible to shoppers. This trend is also representative of the type of experience downtown Florence offers its customers: a quick shopping experience. The majority of Florence's stores are small and are not suited to long-term browsing.
- . The short-shopping trend is substantiated by the hourly data which shows that an average of 90% of all parkers stay less than 1 hour (see Table 3).
- . Table 4 presents data on the use levels for 12 of the 30 lots in Florence. Following the capacity percentages over time gives a sense of the type of parker the lot is serving. Yesterday's is most crowded at the end of the day when people stop in for a drink on their way home. The Scuba Shop, the Apollo plant, and the Florence Savings Bank lots all provide parking for employees; the levels in each lot drop after 4 p.m. Alexander's level rises at mealtimes.
- . Overall, people tend to park on the street for short time; employees use private lots; and the character of the parking

patterns within the downtown varies greatly with the type of business that is attracting parkers.

Parking Supply and Demand

Two methods were used to make supply and demand estimates:

A) building use standards, and B) observed patterns.

- A. Building Use Parking Standards. The amount of parking needed for downtown Florence was first estimated by using demand standards based on the type of land use occurring. Table 5 gives the types of building use by quadrant and street and also the standards used in this study. The standards used are taken from the City of Northampton's zoning ordinance. To simplify the analysis, the detailed zoning standards were generalized into four categories:
- 1) Commercial - 3 spaces/1000 square feet. This category includes all retail and consumer oriented businesses including crafts and restaurants.
 - 2) Office - 3 spaces/1000 square feet. This use type includes insurance, real estate, and 2nd floor banking offices.
 - 3) Health Services - 5 spaces/1000 square feet -- consists of medical and dental offices and the health center.
 - 4) Residential - 2 spaces/1000 sq. ft. This category includes only multifamily buildings. Specifically excluded are one and two family houses with their own driveways. This standard is a variation on the City's standard of 2 spaces per living unit.

There are approximately 104,248 square feet of commercial space in downtown Florence along with 14,964 sq.ft. of office, 14,912 of health services and 36,931 sq.ft. of apartment space. These are estimates from data collected by the City Assessor's Office.

Based on these standards, Quadrant II creates the greatest demand for parking at 166 spaces. This is followed by Quadrant IV (141 spaces), III (116) and I (88 spaces).

Table 6 compares estimated demand with existing supply per quadrant. Overall, Florence does have sufficient parking according to the standards. It uses only 70% of the available parking throughout the day. The only quadrant showing a deficit (a need for more spaces) is IV. This can be attributed to the absence of lots along Maple Street.

Table 7 goes further with this approach and focuses on businesses that are not adjacent to private lots. This gives a picture of those businesses that do not have access to their own lot and instead must depend on public on-street parking. Almost all businesses in Quadrants I, II and III are adjacent to lots. As shown in Table 8, this approach indicates a surplus in all quadrants. Before discussing the significance of these findings, the observed capacity patterns should be reviewed.

B. Observed Patterns - Whereas estimating parking demand using established standards is valid (it is a routine method used by developers to estimate the amount of parking needed for

new construction), it is also just an estimation, no more. The differences between sites in traffic flow, location of residential areas, signage and the type of businesses in a downtown are all variables that lessen the dependability of "accepted standards". Nonetheless, those standards are valuable for comparison because of an area's observed demand varies greatly from that expected from standards, the difference needs to be considered. Given this, how do Florence's observed patterns differ from the observed standards?

Returning to Table 2, the data gathered from direct observation of parking patterns shows excess capacity in all quadrants. As mentioned before, even at peak parking periods, never more than 70% of total street capacity was in use.

These findings support the estimate based on the building use parking standards which also show demand at 70% of supply.

Parking Attitude Survey

- . Based on the 107 parkers who were interviewed for this study, the majority of people (61%) are satisfied with the parking situation in Florence.
- . Tables 9 and 10 present the results of the questionnaire and information on the interviewees.
- . Of those who were dissatisfied, 50% cited lack of space as the major problem. Despite this, there was also a general recognition that there is no extra space currently available for a public lot.

III. TRAFFIC IN KEY AREAS

This study included the services of a consulting engineer who conducted field observations of traffic flow to identify problem areas and who then made recommendations regarding those areas (See Appendix - Engineer's Report). Of special concern were the changes anticipated from the new Florence Savings Bank drive-through. Consequently, this study examined ways to minimize congestion resulting from traffic flow along Keyes Street. Given the importance of off-Main Street parking, ways to increase the efficient use of the Depot Street parking area were also examined. The techniques, findings and recommendations of the consulting engineer are presented in the Appendix.

demand.

In general, if the pressure for growth increases, any downtown property is susceptible to a change of use. Despite these possible development trends, however, Florence seems relatively well-equipped to handle future increases in parking demand.

The recommendations that arise from these findings are as follows:

- . Parking meters are not currently necessary in Florence. If parkers change their habits, meters may be required due to the limited street parking available within the downtown.
- . Signage should be used to make drivers more aware of off-street parking and to clarify traffic flow (see Engineer's Report). Examples of needed signage improvements include: making the entry to Miss Flo's Diner one way (see Engineer's Report), directing parkers to use Maple Street for downtown shopping, and encouraging greater use of the Depot Street parking area.
- . Maintain and enforce current zoning regulations that require adequate parking to be provided when development occurs,
- . Once the bank facility has opened, test the option of making Keyes Street one-way from Main Street to the drive-through entrance (See Engineer's Report).
- . Encourage continuation of the current practice of employees using off-street lots. The recommended improvements on Depot Street will facilitate this.

- . In light of the important contribution made by private lots to Florence's adequacy of parking, promote cooperation among the businesses to remove obstacles to shared use.

FIG 1 DESCRIPTION OF LOTS PER QUADRANT

Quadrant I - N. Maple Street

Lot Name	Assessor#	Capacity
.Post Office	17C-221	40
.Florence Inn	17C-179, 220	21
.Hardware	17C-293	13
.Mill Building	17C-312	30
.West's	17C-224	4
TOTAL		98

III- Main to Chestnut

Lot Name	Assessor#	Capacity
.Friendly's	23-A-73	38
.Scuba Shop	23-A-74	45
.Florence Arco	23-A-76	13
.Coopers	23-A-80	11
.Medical Office	23-A-80	10
.Cumberland Farms	23-A-197	7
.Finck's Insurance	17-A	15
TOTAL		139

II - Main, Keyes, Depot

Lot Name	Assessor#	Capacity
.Miss Flo's	17-C-214	6
.Everybody's	17-C-213	12
.Bank of N.E.	23-A-72	24
.N.H. Health Center	23-A-70	68
.Yesterday's	23-A-69	20
.Gas Station	23-A-68	12
.Florence Inn	17-C-210, 209, 207	45
.Visiting Nurses		
and Florence Bank	176-208	30
.Visiting Nurses	17C-208	4
.Small Engine Repair	17C-215	2
.Alexander's	17C-216	44

TOTAL

267

IV - Maple and N. Maple

Lot Name	Assessor#	Capacity
.Birds	17-C-223	20
.Gifford	23A-40	25
.Ouilette	23A-41	11
.Fran's Hobby	23A-56	3
.Suburban Carpet	23A-62	15

TOTAL

74

Table 1 - Florence Parking Space Inventory by Quadrant and Street*

QUADRANT	Total Spaces #	Street Spaces		Lot Spaces	
		#	%	#	%
I	128	30	23.4	98	76.6
N. Maple					
II	329	62	18.8	267	81.2
.Main					
-N. Maple - Keyes	31	13		18	
-Maple - BNE	136	12		124	
.Keyes	92	13		79	
.Depot	70	24		46	
III	166	27	16.3	139	83.7
.Main					
-Keyes-Chestnut	64	21		43	
-Friendly-Chestnut	102	6		96	
IV	121	47	38.8	74	61.2
.Maple	94	40		54	
.N. Main	27	7		20	
TOTAL	744	166	22.3	578	77.7

TABLE 5 - TOTAL FLORENCE DEMAND - BASED ON BUILDING USE STANDARDS

BUILDING USE TYPE, SQUARE FOOTAGE AND PARKING DEMAND STANDARDS

	Commercial Sq. Ft.	3/1000 Space Demand	Office Sq. Ft.	3/1000 Space Demand	Health # Staff	5/1000 Space Demand	Residential Sq. Ft.	*2/1000 Space Demand	Total** Demand
<u>QUADRANT 1</u>									
N. Maple St.	25,575	77	--	--	--	--	5,272	11	88
<u>QUADRANT 2</u>									
Main (N. Maple BNE)	20,299	61	5,556	17	--		--		
Main (Maple BNE)	6,055	18	--		11,613	58	--		
Keyes Depot	1,000 684	3 2	2,346 --	7	-- --		--		
	28,088	84	7,902	24	11,613	58			166
<u>QUADRANT 3</u>									
Main (Keyes-Chestnut)	14,506	44	5,862	18	3,299	17	5,304	11	
Main (Friendlys- Chestnut)	6,623	20	--		--		2,594	6	
	21,129	64	5,862	18	3,299	17	7,898	17	166
<u>QUADRANT 4</u>									
Maple	22,155	67	1,200	4	--	--	16,125	32	
N. Main	7,355	22	--		--	--	7,636	16	141
	29,506	89	1,200	4			23,761	48	

* Single and Two-Family Houses with Private Driveways Are Not Included
 ** Industrial Property is not included since demand is limited to employers
 *** Ranges from Northampton Zoning Regulations and Dimensions of Parking ULI

TABLE 6 - FLORENCE DEMAND-SUPPLY COMPARISON - BASED ON BUILDING USE STANDARDS*

QUADRANT	Total Demand	Total Supply	On-Street Supply	Off-Street Supply	Total Surplus (Deficit)
I	90	128	30	98	38
II	170	329	62	267	159
III	116	166	27	139	50
IV	141	121	47	74	(20)
Totals	517	744	166	578	227

$$\frac{\text{Total Demand}}{\text{Total Supply}} = \frac{517}{744} = 70\%$$

*Supply Areas per sector overlap with other sectors. See Fig. Definition of sectors and supply areas.

TABLE 8 - DEMAND-SUPPLY COMPARISON FOR BUSINESSES WITHOUT ADJACENT LOTS

- Based on Building Use Standards

QUADRANT	Demand	On-Street Supply	Surplus (Deficit)
I	16	28	12
II	--	60	60
III	7	25	18
IV	11	47	36

TABLE 9 - PARKING ATTITUDE SURVEY RESULTS BY CHARACTERISTICS OF INTERVIEWEES

Street	Total Interviews	Sex		18-40	Age		60+	Opinion	
		M	F		40-60	60+		Satisfied	Unsatisfied
Main	49	24	25	33	11	4		34	15
Keyes	12	6	6	6	6	0		5	7
Maple	31	22	9	12	12	7		17	14
N. Maple	9	7	2	3	4	2		5	4
N. Main	5	0	5	1	2	2		3	2
Depot	1	1	0	1	0	0		1	0
Totals #	107	60	47	56	35	15		65	42
(%)		(56%)	(43%)	(52)	(33)	(14)		(61)	(39)

TABLE 10 - ACTIVITIES BRINGING INTERVIEWEES TO DOWNTOWN FLORENCE

- Number of Parkers by Activity

<u>Street</u>	<u>Work</u>	<u>Post Office</u>	<u>Banking</u>	<u>Drinking Eating</u>	<u>Shopping</u>	<u>Services*</u>	<u>Other**</u>
Main	7	8	9	9	10	3	1
Keyes	2	-	11	-	-	-	-
Maple	1	-	-	3	20	6	1
N. Maple	-	2	-	1	3	3	-
N. Main	-	-	-	-	3	2	-
Depot	1	-	-	-	-	-	-
Total #	11	10	20	13	36	14	2
(%)	(10%)	(9%)	(19%)	(12%)	(34%)	(13%)	(2%)

* Doctor, Dentist, Hair Stylist, Accountant, Barber Shop, Shoe Repair, Cleaners, Laundromat

** Visiting Relatives, Library

TECHNICAL MEMORANDUM

CA

TO: Jeanne Armstrong, LandUse

FROM: J. W. Dietrich, P.E., Champagne Associates

DATE: April 24, 1985

SUBJECT: Downtown Florence Traffic Circulation Review
CA Project 85-82-N

SUMMARY OF WORK PERFORMED

The following briefly summarizes the work that we performed in reviewing traffic circulation features of the downtown Florence area. We have prepared this per our agreement with you dated April 15, 1985. Basically our scope of work is as follows:

1. Field observations of traffic flow in the Keyes Street area, including midday vehicle turning movement counts in this area;
2. Review of the Florence Savings Bank expansion plan with respect to its implications on traffic flow in the Keyes Street area;
3. Evaluation of options for Keyes Street circulation;
4. Field observations of traffic movements in the Main Street area, between Park and Chestnut Streets;
5. Summarization of recommendations based on our limited field study.

The following summarizes the results of our findings in terms of discussion of Keyes Street traffic and a summary of other downtown traffic improvements which we make based on observations of traffic flow.

KEYES STREET TRAFFIC

Existing Conditions

Keyes Street between Main Street and High Street varies in pavement width from between 30 feet near the Main Street intersection to approximately 20 feet in the vicinity of Keyes Florist Shop. Traffic flows are heaviest between Main and Depot Streets partly due to the activity of the Florence Savings Bank. Between Depot and High Street, traffic volumes are relatively light based on our observations during the midday and afternoon peak hours.



Regarding traffic operations, there were two main areas of concern based on our noon time observations when bank traffic was particularly active. One area of concern is the intersection of Keyes Street with Main Street. Left turns are often delayed making the turning movement onto Main Street. Problems related to this left turn movement were delays due to the through traffic volume on Main Street, pedestrian activity across Keyes Street, and restricted sight distance in both directions on Main Street, due to curbside parking along the north side of Main Street adjacent to the intersection area. The level of service for Keyes Street traffic at the approach to Main Street is in the area of the low level of service C, approaching level of service D based on our noontime weekday counts. The second problem observed is primarily one of curb parking interference associated with bank traffic across from the Visiting Nurses' Association on Keyes Street. There was curbside parking observed along the west side of Keyes Street during the noontime hour in particular. With the pavement width of 22 feet in this area, curbside parking allows for only one lane of traffic movement along Keyes Street when curb parking is present.

Future Conditions After Bank Expansion

Florence Savings Bank Expansion and New Banking Facility

The new remote banking facility presently under construction is proposed to have the following characteristics:

- Three (3) drive-up teller windows
- A 24-hour banking machine (The Money Flo Machine) to be relocated from the existing bank building to the new facility
- New added off-street parking for the remote bank facility to be located behind the Visiting Nurses' Association building
- Revised parking lot layout and traffic circulation in the existing parking lot behind the main bank. There will be an opposite traffic flow to what exists now (i.e., the entrance to the parking lot will be from Keyes Street and the exit from the parking lot will be at Depot Street.)

Traffic Operations: Existing Two-Way Flow on Keyes Street

Relocation of the drive-up banking facility is not expected to change the arrival and departure distribution of banking traffic significantly from what it is now. Noon time traffic counts taken by Champagne Associates indicate that approximately 66% of the bank traffic leaving



the Florence Savings Bank parking lot and drive-up window turn right at Keyes Street and head south to Main Street. The other 34% of the bank traffic exiting the bank parking lot turns left heading north on Keyes Street towards Depot or High Street. The new exit driveway from the new drive-up facility is to be located approximately 65 feet from the Main Street intersection area. With this driveway set-back from Main Street, the third car in a line of vehicles backed up on Keyes Street waiting to exit onto Main Street will prevent the safe exit of a vehicle exiting from the new bank facility driveway desiring to turn left onto Keyes Street during the peak traffic hours. This likely interference between exiting bank traffic and Keyes Street traffic backed up at the Main Street intersection at the peak hours suggests the need for further investigation of traffic control signage or changes in the traffic circulation on this southerly end of Keyes Street.

Traffic Circulation Options

The following appear to be feasible traffic circulation options worthy of further consideration based on our limited traffic counts and field observations of traffic movements in the area.

1. Do nothing: leave Keyes Street as is

a. Advantages

- 1) Maintains present familiarity of residents and other Keyes Street users with current traffic circulation.
- 2) Allows for drive-up bank traffic to use the shortest travel path to Main Street or destinations to the east

b. Disadvantages

- 1) During peak banking hours and commuting hours, substantial delays to left turns out of the new bank driveway may be experienced. These delays may adversely impact the efficient operation of the drive-up teller if delayed exiting traffic holds up the progression of the bank traffic.

GA

- 2) The proximity of the new bank facility driveway from Main Street (approximately 65 feet) may adversely impact northerly traffic flow on Keyes Street at this area. This is true particularly if exiting bank traffic partially enters the traffic stream on Keyes Street waiting for a break or gap in the Keyes Street traffic at the Main Street approach in peak hours.

2. Make Keyes Street One-Way: Main Street to Depot Street

a. Advantages

- 1) This option assumes one-way northbound traffic flow away from Main Street on Keyes Street. This would eliminate left-turn delays and capacity and sight problems which presently exist during peak hours out of Keyes Street onto Main Street.
- 2) Vehicle conflicts with respect to Main Street through traffic and right and left-turn out of Keyes Street would be eliminated.
- 3) Reduces vehicle/pedestrian conflicts across Keyes Street by virtue of reducing the Keyes Street traffic volume significantly at the Main Street approach.
- 4) Provides more roadway width which will now be available to accommodate curb parking along the existing bank facility more efficiently.
- 5) Simplifies turning movements at the Depot Street - Keyes Street intersection area.

b. Disadvantages

- 1) There may be general resistance to the change in circulation by the business community and/or residents; it would require an alteration of the travel pattern for those residents who travel southbound on Keyes Street to Main Street between Depot and Main.
- 2) Could change traffic patterns significantly for those bank patrons that presently enter the Florence Savings Bank from the Depot Street/High Street area. Based on our traffic counts made during the 11 AM to 1 PM period on April 18, 1985, at least 41% of patrons that enter the parking lot and the drive-up teller area during the noon hour come from the northwest via Depot Street. It is likely that a significant number of these might be diverted to Main Street thereby increasing the volume of left turns from Main Street into Keyes Street in order to gain entry to the new banking facility.



- 3) Would impact access to the parking lot behind the main bank building; access to this lot would have to be made via Main Street to Keyes Street, unless the circulation pattern in the lot was reversed (this could easily be done, however, by making the Depot Street driveway an entrance rather than an exit as proposed).
 - 4) Would likely add traffic (bank exit traffic) to Depot Street/ North Maple Street and High Street/Chestnut Street as alternatives to using the present Keyes/Main Street intersection area as an exit. It appears that this added traffic will not significantly impact these other local streets however.
3. Make Keyes Street One-Way: From Main Street to the New Bank Entrance (approximately 120 feet)
- a. Advantages
- 1) Same as in 2.a.1) above.
 - 2) Same as in 2.a.2) above.
 - 3) Same as in 2.a.3) above.
 - 4) Same as in 2.a.4) above.
 - 5) Allows convenient access to the bank as it is presently from the High Street and Depot Street areas: It would not affect a significant change in bank traffic patterns as indicated in 2.b.2) above.
 - 6) Maintains convenient access to the Visiting Nurses' Association building and the off-street parking lot just opposite the intersection of Depot Street.
- b. Disadvantages
- 1) Same as in 2.b.1) above.
 - 2) Same as in 2.b.4) above.



- 3) Would require special traffic sign(s) for Keyes Street southbound traffic at the Depot Street intersection such as "NOT A THRU STREET" sign, to advise southbound Keyes Street traffic that there is not access onto Main Street south of Depot Street.

4. Overall Recommendations

The consideration of one-way traffic flow on Keyes Street requires further detailing of the following:

- Projected traffic volumes for the drive-up window and other activity at the new banking facility
- Specific bank traffic volume counts for the morning, afternoon and/or other peak banking hour periods, including Saturday morning.
- Morning and evening peak hour turning vehicle movement counts at the Main Street/Keyes Street intersection area during a typical weekday period and on a Saturday morning.
- Morning and evening turning vehicle counts at the intersection of North Maple Street and Main Street.

Based on our field review of noontime traffic conditions and observations of morning and evening commuter traffic on Main Street in Florence, we feel that further traffic investigations should be conducted regarding the consideration of Keyes Street one-way traffic movement. It appears that the most feasible alternative for a one-way movement would be that for the short section of Keyes Street movement away from Main Street between Main Street and the new bank facility entrance.

Without further traffic analyses at this time, one alternative for proceeding with improvement plans would be to leave Keyes Street as two-way as it presently is and monitor the traffic operations at the new bank facility driveways after the facility is opened. Traffic counts should be taken of actual bank traffic after the new remote facility opens and an evaluation made of the impact of traffic operations at the Keyes Street-Main Street intersection. If problems were evident at this intersection area based on measured traffic conflicts and operational delays, then an initial effort might be to install "NO LEFT TURN" signs at the bank exit driveways. This prohibition, however, would be difficult to enforce. The next improvement stage would be to implement a one-way flow on Keyes Street between Main Street and the remote facility entrance driveway on a trial basis. The trial period of one-way operation should

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a minimum of 45-60 days. Regulatory traffic control signs would be required (e.g., ONE-WAY, DO NOT ENTER), as well as curbing or traffic island reconstruction to facilitate and direct the one-way operation.

OTHER DOWNTOWN AREA TRAFFIC IMPROVEMENTS

Main Street Between Chestnut Street and Keyes Street

One problem noted in this section was at the entrance to the Bank of New England adjacent to the Friendly's and the Northampton Health Center. This entrance to the bank is restricted in two respects: the curb cut for the driveway width is very narrow and often the parking space immediately to the west of the driveway interferes with efficient movement of right-turn traffic into the driveway; and there is a considerable grade change between the curbline of Main Street and the sidewalk area which requires vehicles to slow down and almost stop when entering the driveway in order to minimize the bouncing of the vehicle as it enters the driveway. Changes in the transition area of this driveway as well as the width may be possible in conjunction with other roadside improvements as part of this project.

Parking on the north side of Main Street right next to the Keyes Street intersection interferes with the available sight distance for southbound traffic exiting Keyes onto Main. Each parking space adjacent to the Keyes Street intersection with Main should be eliminated and "NO PARKING" signs installed at this intersection area.

Main Street Between Keyes Street and North Maple Street

On-street parking is heavily utilized in this area during all periods of the day, but it was particularly heavy during noontime. There is some interference to through traffic due to parking and unparking maneuvers along the curbside, but short of widening the roadway, there are few options available to reduce this friction. Pedestrian activity was noted across Main Street opposite the Florence Savings Bank.

It is recommended that a one-way traffic movement away from Main Street into the parking area for the Miss Florence Diner be further investigated and discussed with the property owners. The parking layout now adjacent to the Miss Florence Diner is conducive to the one-way entrance flow and this movement would eliminate traffic conflicts and operational delays now due to traffic which tries to exit this driveway area. One-way traffic signs would have to be installed at the driveway area and DO NOT ENTER signs should also be installed within the property internal to the parking area. This one-way entrance should also apply to the driveway adjacent to Everybody's Market.



Depot Street

Depot Street between North Maple and Keyes Street is very curvilinear in nature. There are no pavement markings present which define the center of the roadway or the edge of the roadway. There is a fringe parking area on the north side of Depot Street adjacent to the Bike Way. The following improvements are recommended along Depot Street:

1. Install double yellow centerline pavement markings along Depot Street between Keyes and North Maple Street
2. Install painted edge lines along both sides of Depot Street to define the edge of pavement and to separate the parking areas from the main thru street.
3. Consider installing parking stall lines along the north fringe of Depot Street to better delineate this area for parking.
4. Provide physical separation of the Alexander's Restaurant parking lot with the south edge of Depot Street either by curbing and/or pavement markings which separate the parking lot from the roadway.
5. Prevent parking on either the north or south side of Depot Street at the approach to North Maple Street. It would be preferable to prohibit parking on the southside adjacent to the Florence Cleaners' building. Parking prohibition signs should be installed accordingly.

High Street

The intersection of High Street with North Maple Street should be delineated with centerline pavement markings. The restriction of parking along the north and south sides of High Street at the intersection approach to North Maple Street should be implemented. Parking should be prohibited through signage for at least 60 feet back from the intersection area with North Maple Street. It was observed during the noontime period and also in the morning period that vehicles parked along the northside of High Street, effectively reducing the width of High Street to only one lane of operation.



The North Main Street/North Maple Street Intersection Area

Noontime observations of traffic movement at the signalized intersection of North Maple and Main Street with South Maple indicated relatively good level of service for traffic at this intersection area. Pedestrian crossing movement was noticeable but not unusually heavy during the weekday period observed. There were no overloaded signal cycles on any approach at the intersection area during the noon hour, indicating that all traffic approaching the intersection is served during one green cycle with no traffic held over for a second cycle.

In the future funding sources for improvement of equipment at this intersection should be investigated relative to putting a fully actuated controller at this location. This upgrading of equipment would more efficiently allocate time to each approach based on the actual traffic demand. The present signal is a fixed time signal which allocates a fixed amount of green time during every 75-second cycle throughout the day. The cost-effectiveness of improving the type of controller cannot be determined at this point without more detailed traffic information at the intersection area.

Park Street/Meadow Street/North Main Street

Although a detailed assessment of the existing traffic operation characteristics at this intersection area was beyond the scope of our work, we did observe traffic movements at this intersection area during our field observation period. Based on our observations of the traffic flow at the noontime period as well as morning and evening peak hour periods, we would recommend that Yield signs be installed on the Meadow Street leg of the intersection at its approach to the North Main Street signalized intersection area. This would be for traffic as it travels on Meadow Street and is about to enter the North Main Street traffic stream in an easterly direction.

CHAMPAGNE ASSOCIATES, P.C.
Consulting Engineers

JOB 85-82-N

SHEET NO. _____ OF _____

CALCULATED BY JWB DATE 4/22/85

CHECKED BY _____ DATE _____

SCALE _____



